

We Claim:

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- 1. LHR purified to a single band on SDS-PAGE as visualized by silver stain.
 - 2. The LHR of claim 1, being the HuLHR.
 - 3. The LHR of claim 1, being the MLHR.

4. The LHR of claim 1 which binds to the high endothelial venules of lymphoid tissue.

- 5. The LHR of claim 1, wherein the LHR is not associated with native glycosylation.
 - 6. The LHR of claim 1, wherein the LHR has variant glycosylation.
- 7. The LHR of claim 1 in a physiologically acceptable carrier.
 - 8. The LHR of claim 7, wherein the carrier is a sterile, isotonic solution.
 - 9. The LHR of claim 7, wherein the carrier is a sustained-release formulation.
 - 10. The LHR of claim 7, wherein the carrier is a liposome.
 - 11. A DNA isolate encoding the LHR.
- 12. The DNA isolate of claim 11 wherein the DNA isolate is free of genomic DNA which encodes another polypeptide from the source of the DNA isolate.

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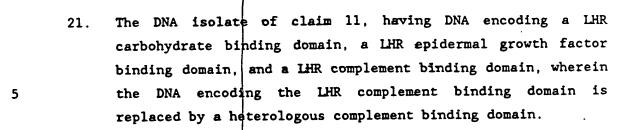
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- 13. The DNA isolate of claim 11, wherein the DNA encodes a polypeptide having the amino acid sequence shown in figure 1.
- 5 14. The DNA isolate of claim 11, wherein the DNA encodes a polypeptide having the amino acid sequence shown in figure 2.
 - 15. The DNA isolate of claim 11, comprising DNA encoding an LHR carbohydrate binding domain free of epidermal growth factor domains and complement binding domains.
 - 16. The DNA isolate of claim 11, comprising DNA encoding an LHR epidermal growth factor binding domain free of carbohydrate binding domains and complement binding domains.
 - 17. The DNA isolate of claim 11, comprising DNA encoding an LHR complement binding domain free of carbohydrate binding domains and epidermal growth factor binding domains.
- 20 18. The DNA isolate of claim 11, comprising DNA encoding an LHR complement binding domain and an epidermal growth factor domain.
- 19. The DNA isolate of claim 11, having DNA encoding a LHR carbohydrate binding domain, a LHR epidermal growth factor binding domain, and a LHR complement binding domain, wherein the DNA encoding the LHR carbohydrate binding domain is replaced by a heterologous carbohydrate binding domain.
- The DNA isolate of claim 11, having DNA encoding a LHR carbohydrate binding domain, a LHR epidermal growth factor binding domain, and a LHR complement binding domain, wherein the DNA encoding the LHR epidermal growth factor binding domain is replaced by a heterologous epidermal growth factor binding domain.

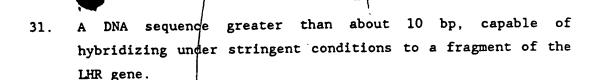
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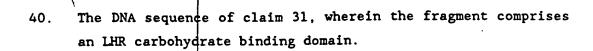


- 22. A recombinant expression vector comprising DNA encoding the LHR.
- 23. A composition comprising a cell transformed with the recombinant expression vector of claim 22.
 - 24. The composition of claim 23 wherein the cell is a mammalian cell.
 - 25. The composition of claim 23 wherein the cell is a chinese hamster ovary cell line.
- 20 26. A process for producing the LHR which comprises transforming a host cell with nucleic acid encoding said LHR, culturing the transformed cell and recovering said LHR from the cell culture.
- 25 27. The process of claim 26 wherein the host cell is a eukaryotic cell.
 - 28. The process of claim 26 wherein the LHR is HuLHR.
- 30 29. The process of claim 26 wherein the LHR is MLHR.
 - 30. The process of claim 26 wherein the LHR is secreted into the culture medium and recovered from the culture medium.

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- 5 32. The DNA sequence of Claim 31, wherein the stringent conditions are overnight incubation at 42 °C in a solution comprising: 20% formamide, 5XSSC (150 mM NaCl, 15 mM trisodium citrate), 50 mM sodium phosphate (pH 7.6), 5X Denhardts solution, 10% dextran sulfate, and 20 μg/ml denatured, sheared salmon sperm DNA.
 - 33. The DNA sequence of Claim 31, wherein the fragment is a biologically active fragment.
- The DNA sequence of Claim 31, wherein the fragment, is from the coding region of the LHR.
 - 35. The DNA sequence of claim 31, ligated to DNA from a non-human source.
 - 36. The DNA sequence of claim 31, wherein the fragment comprises a fragment of the DNA sequence of Fig. 1 or Fig. 2 which is greater than about 10 bp.
- 25 37. The DNA sequence of claim 31, wherein the fragment comprises a fragment of the DNA sequence of Fig. 1 or Fig. 2 which is greater than about 20 bp.
- 38. The DNA sequence of claim 31, wherein the fragment comprises a fragment of the DNA sequence of Fig. 1 or Fig. 2 which is greater than about 50 bp.
- 39. The DNA sequence of claim 31, wherein the fragment comprises a fragment of the DNA sequence of Fig. 1 or Fig. 2 which is greater than about 100 bp.



- 5 41. The DNA sequence of claim 31, wherein the fragment comprises an LHR epidermal growth factor domain.
 - 42. The DNA sequence of claim 31, wherein the fragment comprises a complement binding domain.
 - 43. A DNA sequence coding for the HuLHR, which DNA is substantially free of DNA encoding other human polypeptides.
 - 44. A polypeptide comprising an LHR carbohydrate binding domain.
 - 45. A polypeptide comprising an LHR epidermal growth factor domain.
 - 46. A polypeptide comprising an LHR complement binding domain.
 - 47. A polypeptide comprising an LHR transmembrane domain.
 - 48. A polypeptide comprising an LHR cytoplasmic domain.

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